Column descriptions:
Watershed Health Monitoring:
Selected Metrics from the Upper Columbia

SAMPLING EVENT

Data Collection Event: This is a unique identifier for a sampling event. It is based on the SITE-ID, along with the date and time that sampling started for the event. Sampling events typically last approximately 6 hours.

Protocol: Since 2009, we have used 2 protocols, each available for download at the project web page. These are due for updating in 2014, to incorporate a number of method changes including new electronic data recording methods.

- Narrow – This is the protocol for sampling streams < 25 meters bankfull width, by wading.
- Wide – This is the protocol for sampling wide rivers (≥ 25 m), by raft. This protocol can also be applied to narrow rivers that are too deep/swift to wade. The protocol can also be applied by wading, if the river is wide, but too shallow to float.

Visit: Iteration of sampling. This lets us distinguish each sample, whether it is a

- *re-visit* (replicated within a year), or a
- *re-sample (*replicated across years)

SAMPLE SITE

SITE-ID: 15-digit identifier for the location. For Watershed Health Monitoring

- Probabilistic sites are denoted as WAM06600-xxxxxx
- Select bioassessment reference sites are denoted as BIO06600-xxxxxx
- Statewide sentinel sites (annual samples) are denoted as SEN06600-xxxxxx
- Puget Sound sentinel sites are denoted as EPA06600-xxxxxx

Description: Name of the stream where the site is located.

Class: Size class of the stream, based on Strahler order of stream relative to NHD+ (1:100,000-scale).

- 4 = Rivers aligning with Strahler order 4 or higher NHD+
- 3= Streams aligning with Strahler order 3 NHD+
- 2= Streams aligning with Strahler order 2 NHD+
- 1= Streams aligning with Strahler order 1 NHD+
- 0 = Streams that are higher in elevation than any represented NHD+ stream

Adj-Weight-R1: The site's length (km) representation (in Round 1) of the sampled portion of the sample frame. The frame is the map of streams from which sites were statistically chosen.

STR: Status and Trends Region. These generally conform to Salmon Recovery Regions (SRR). The Puget Sound STR includes the Puget Sound SRR and the Hood Canal/Puget Sound SRR.

Ecoregion3: Omernik Ecoregion (Level III). Available from the USEPA here: http://www.epa.gov/wed/pages/ecoregions/wa_eco.htm

Ecoregion4: Omernik Ecoregion (Level IV). Available from the USEPA here: http://www.epa.gov/wed/pages/ecoregions/wa_eco.htm

DRNAREA (km2): Drainage area above the sample point derived with either

- StreamStats (http://water.usgs.gov/osw/streamstats), or else in
- ArcMap (ESRI, Inc.)

PHYSICAL HABITAT METRICS

The habitat metrics in this file are described in Department of Ecology publication no. 13-03-033: *Dictionary of Metrics for Physical Habitat*:
https://fortress.wa.gov/ecy/publications/SummaryPages/1303033.html

- **X Slope** (%) page 23
- **Site Length (m)** page 26
- **LWDSiteVolume100m (m3/100m)** page 80
- **N DensioBank (count)** page 93
- **X DensioBank (%)** page 93
- **N TWDepth (count)** page 28
- **ResPoolArea100 (cm)** page 37
- **SD TWDepth (cm)** page 28
- **N Substrate (count)** page 124
- **PCT SandFines (%)** page 127

BIOLOGICAL INDEX

BIBI 100 is the Benthic Index of Biological Integrity (evaluated on a 0-100 scale). This index is discussed and reported here: http://pugetsoundstreambenthos.org. We report the version that is based on Fore, Wisseman 2012 taxonomic attributes.